Joint Aviation Technical Data Integration (JATDI)

JATDI Web Site User's Guide

" Bringing Multi-Media Knowledge Assets to the Strategic and Tactical Warfighter Through an Internet Technologies based Framework"

TABLE OF CONTENTS

1.0 Introduction

Department of Defense's (DoD) **NAVAIR** and **AMCOM** are supporting the development of a prototype web-based application integrating Commercial-off-the-Shelf (COTS) products to obtain and display requested aviation technical data for selected Joint Weapons Systems. This prototype application has been named the Joint Aviation Technical Data Integration (JATDI) project.

The explosion of the internet and the World Wide Web (WWW) has provided the DoD an unparalleled opportunity to embrace technology and reap readiness improvements and cost savings in improved business processes. Providing weapon system/product data centric multi-media technical information to the Strategic and Tactical warfighter to support the development, acquisition, logistics, and operations of our weapon systems is now practical and necessary to begin the migration of our information policy to meet the Joint Vision 2010 objectives.

Sophisticated internet server tools for sharing data, while maintaining authenticity and integrity, are remarkably cost effective to deploy and significantly less burdensome to maintain than ever imagined. Encouraging and enabling organization, site, system, and service ingenuity to optimize business processes requires a highly versatile framework for maintaining our data as a corporate asset while servicing the needs of the disparate business processes. Our business processes can now be optimized based on size, complexity, personnel/organization, and weapon system. Flexibility with an overall framework postured for infusion of rapidly changing technologies and capabilities will provide the DoD the ability to optimize the use of the diverse talent both inside the Department and our support from the private sector.

The DoD Netscape Enterprise License provides a robust, scaleable, suite of tools that inherently interoperate and provide tremendous flexibility in methods and configuration of hardware and software. These features provide the opportunity to capitalize quickly producing significant benefits and business improvements.

2.0 JATDI Objectives

To provide the capability for a user, with access to the internet, to obtain technical data on a specific weapon system that can be retrieved from any location and presented back to the requestor's terminal.

2.1 JATDI Vision

Create a technical data integrated environment whereby digital technical data, training, and maintenance expertise is more available and accurate, as **KNOWLEDGE** for the user, by a faster, cheaper means.

2.2 Obtain Digital Data

Through cooperation of the Joint H-60 and EA-6B programs, the owners of appropriate digitized data have agreed to make these sources available through JATDI. The sources of this data are physically located in multiple locations throughout the United States. However, a JATDI user only needs to request specific information without needing to know where the data resides.

Examples of digitized data available for the H-60 and EA-6B weapon systems are:

TECHNICAL MANUALS
TECHNICAL DRAWINGS
SAFETY DATA
TRAINING INFORMATION
READINESS INFORMATION
AUDIOVISUAL MULTI-MEDIA
GENERAL WEAPONS SYSTEM DATA

2.3 Provide Search Capabilities

JATDI uses a COTS product that catalogs each data source location and provides a powerful capability to search across the entire weapons system for all information by a specific topic. All located references are provided back to the user.

2.4 Provide Adequate Security

JATDI has a public web site with a comprehensive security profile to protect weapon system data. Each weapons system office has established a matrix that defines what data each type of user can access.

2.5 JATDI Benefits

Replacement of limitless hard copy publications:

- at your fingertips
- at your location
- on demand

3.0 Background

In the fall of 1998, the Joint Aviation Logistics Board (JALB), as a working committee of DoD's Joint Aviation Commander's Group (JACG), recommended a prototype be established that would utilize web-based technology to obtain stored digital data and display this data electronically to the requestor. The JALB had observed this capability in the Army Material Command's (AMCOM) project KAMNET (Knowledge Asset Management Network). The Army had developed a web-based application for their H-60 Blackhawk Program Office.

The JALB tasked the JATDI project with building on the KAMNET foundation, expanding the H-60 (Teamhawk) to all Services and adding the EA-6B (Prowler) weapons platform.

3.1 KAMNET

In November 1997, in response to requests from the warfighters, a KAMNET initiative was established within the Army to improve communication and data integrity between weapon systems program offices, their suppliers, R&D and Logistics communities, and the soldier. These pilot processes served as a basis for demonstrating quick implementation and business process improvement.

The flexibility and utility in establishing a short term KAMNET information infrastructure, was quickly recognized. As a result, the U.S. Army Engineering Data Management Systems (EDMS) Program Office, in conjunction with the DoD JEDMICS Program Office implemented an internet technology based Knowledge Asset Management Network.

KAMNET currently has over 3,000 registered users worldwide on its H-60 web-site. These users range from Aviation Commanders to operational level mechanics.

3.2 Project Milestones

The JALB tasked the JATDI Project Team to demonstrate an initial capability to the JACG in August 1999. Upon completion of the initial JATDI web-application, and demonstration to the JACG, the team was tasked to continue expanding the capabilities for the H-60 and EA-6B until December 2000.

In December 2000 the JALB will assess the progress and benefits of expanding the prototype into permanent production, expansion to other weapon platforms, or making a determination to cease further JATDI activities.

3.3 JATDI Prototype Key Personnel

The DoD lead Project Officers for JATDI activities are:

NAVAIR - Stacy Cummings	cummingssa@navair.navy.mil
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Contractor support is provided by:

Lockheed Martin – William C. Fox	william.c.fox@lmco.com
Intergraph Corp. – Skip Levert	lclevert@ingr.com
Kottmann Inc. – Dwayne Buford	dbuford@kottmann.com

3.4 JATDI Projects

There are a number of projects under the JATDI umbrella. These projects are being implemented and evaluated during CY 2000. The primary projects are discussed in the following paragraphs.

3.4.1 Icon On The Desktop

Using web-browser technology to provide access to all data required for specific weapon system business processes. The user will click on an ICON that provides immediate access to the appropriate level of data. This is the primary JATDI web-based application project.

3.4.2 Technical Camera (TechCam)

Provides maintainers with a lightweight, two-way, audio-visual system that is linked via LAN/WAN with Engineering Technical Support (ETS) at a central location. ETS personnel can provide real-time assistance to the maintainer to complete the maintenance process and assistance in returning the end item to an operational status.

3.4.3 TM (Technical Manual) Server

Provides access and local storage for electronic technical manuals and associated data such as Technical Directives and Interim Rapid Action Changes (IRACS). All manuals will be updated on the local server to ensure proper configuration control. This capability will be extended to all meet the Navy operational requirements from Carriers to Frigates.

4.0 Using The JATDI Web-Based Application

The following sections depict the types of screens and data that are available through the JATDI web-site. The project team is adding data sources continuously so the actual screens may have more information available, but the general window's look and feel will remain constant for this web-based application.

4.1 Signing On to JATDI

From any workstation with Internet connectivity and a web-browser, preferably Netscape enter "http://jatdi.redstone.army.mil" in the URL address and the following JATDI homepage will be displayed.

The JATDI website is broken down into five sections. A description of each section is provided in this document.

- Program Information
- Documentation
- Training
- Resources
- Support
- Search

4.1.1 Program Information

The Program Information page is broken down into three sections. The first section is the JATDI Initiatives page, which provides an overview of all the initiatives under the JATDI project.

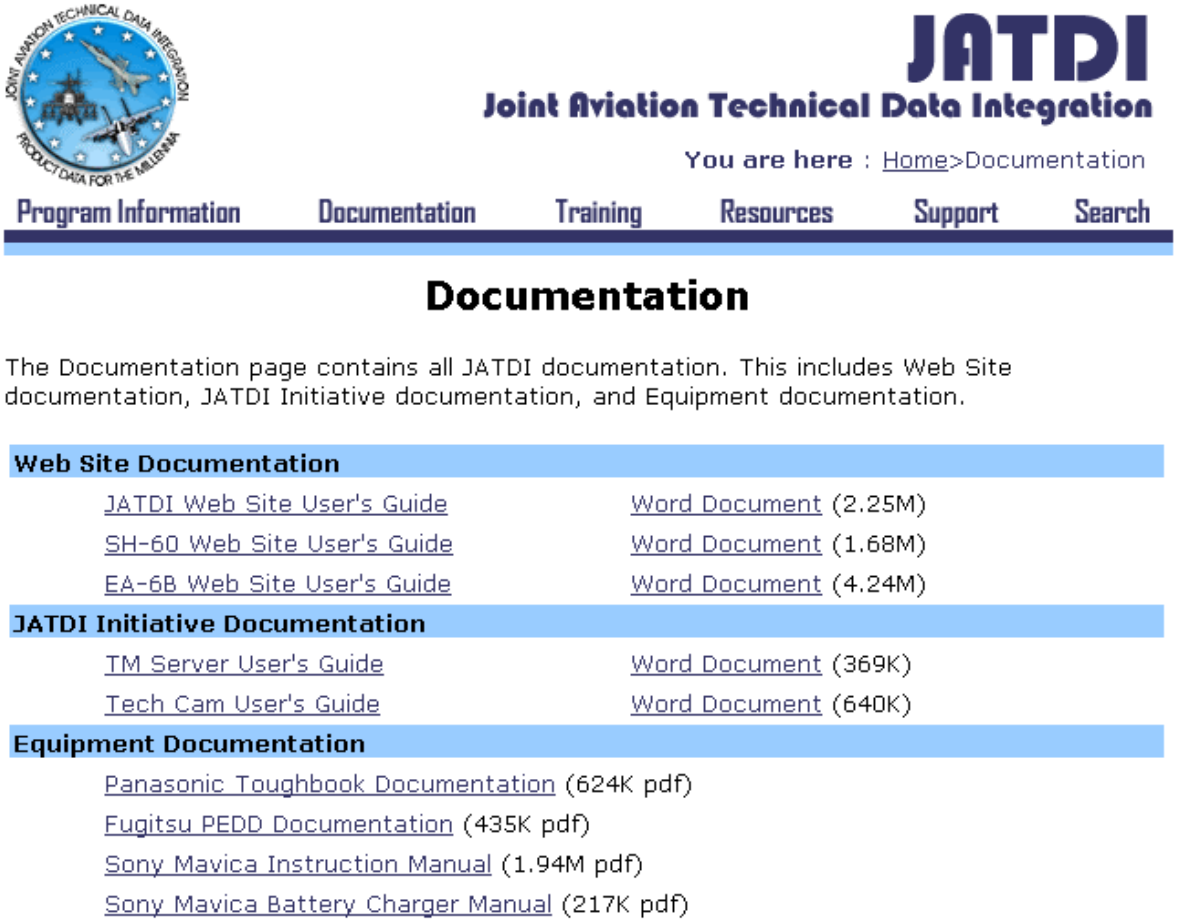
There are seven sub-categories to the Initiative page. They are:

- Technical Product Data
- Technical Performance Data
- Operation Readiness Data
- USS Lincoln Battle Group Support
- Global Knowledge Access
- Technical Knowledge on Demand
- Technical Data Access.

4.1.2 Documentation

The documentation page contains User Guides that were generated to assist the end user with familiarization on the different projects avaliable through JATDI. These documents are done in Microsoft Word and may be download.

Also avaliable on the Documentation page are the Instruction Manuals for the Laptop and PEDDs issued as part of the JATDI project. These instruction manuals have been scanned in Adobe .PDF format.



4.1.3 Training

The training page contains PowerPoint presentations used in the initial training for JATDI. These documents are available for the end user to use for refresher training or to conduct new user training. These .ppt presentation are viewable on line or you may download them.

4.1.4 Resources

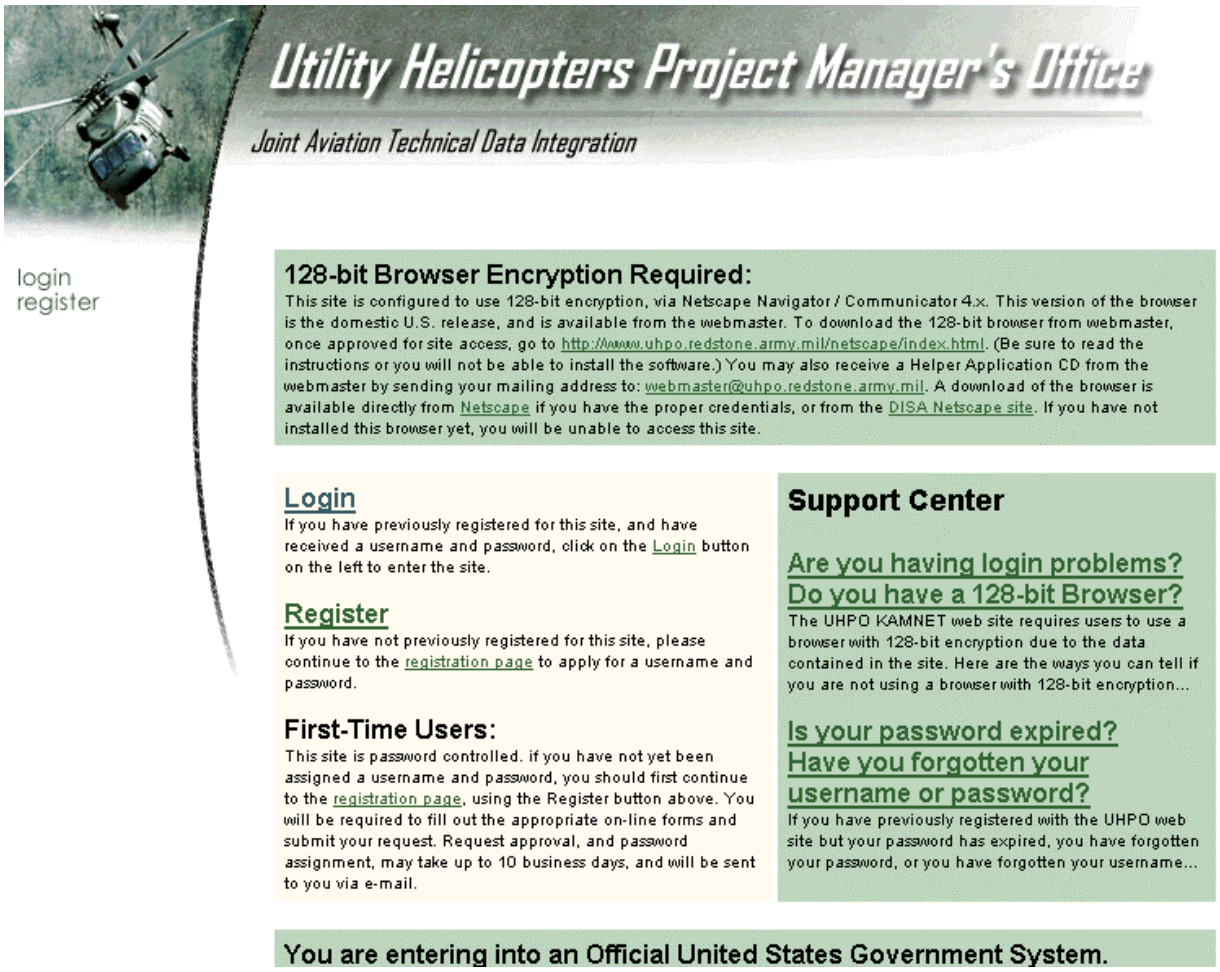
Using the mouse to move the cursor to the Resources TAB. Clicking on it will display the following screen. Selecting the down arrows to the right of each Service results in a pull-down selection menu being displayed from which additional selections can be made that will connect the user to the subject web-site. These resource web-sites that have information (knowledge) germane to aviation weapon systems.

4.1.4.1 Weapon Systems

From the JATDI Resources TAB, the user can go to any of the displayed weapon systems, if the user has been granted security access by the selected weapon system's site administrator.

Selecting the H-60 weapon system from the Army selections on the JATDI Resource Page connects the user to the following screen – the password login authority. You can select log-in (if the user already has one) or submit a request to the site administrator to obtain a password to be able to view the H-60 site.

All of the weapon systems under the JATDI project have similar screens and/or authority requirements before the user can enter the site and obtain all of the digital data that is available.

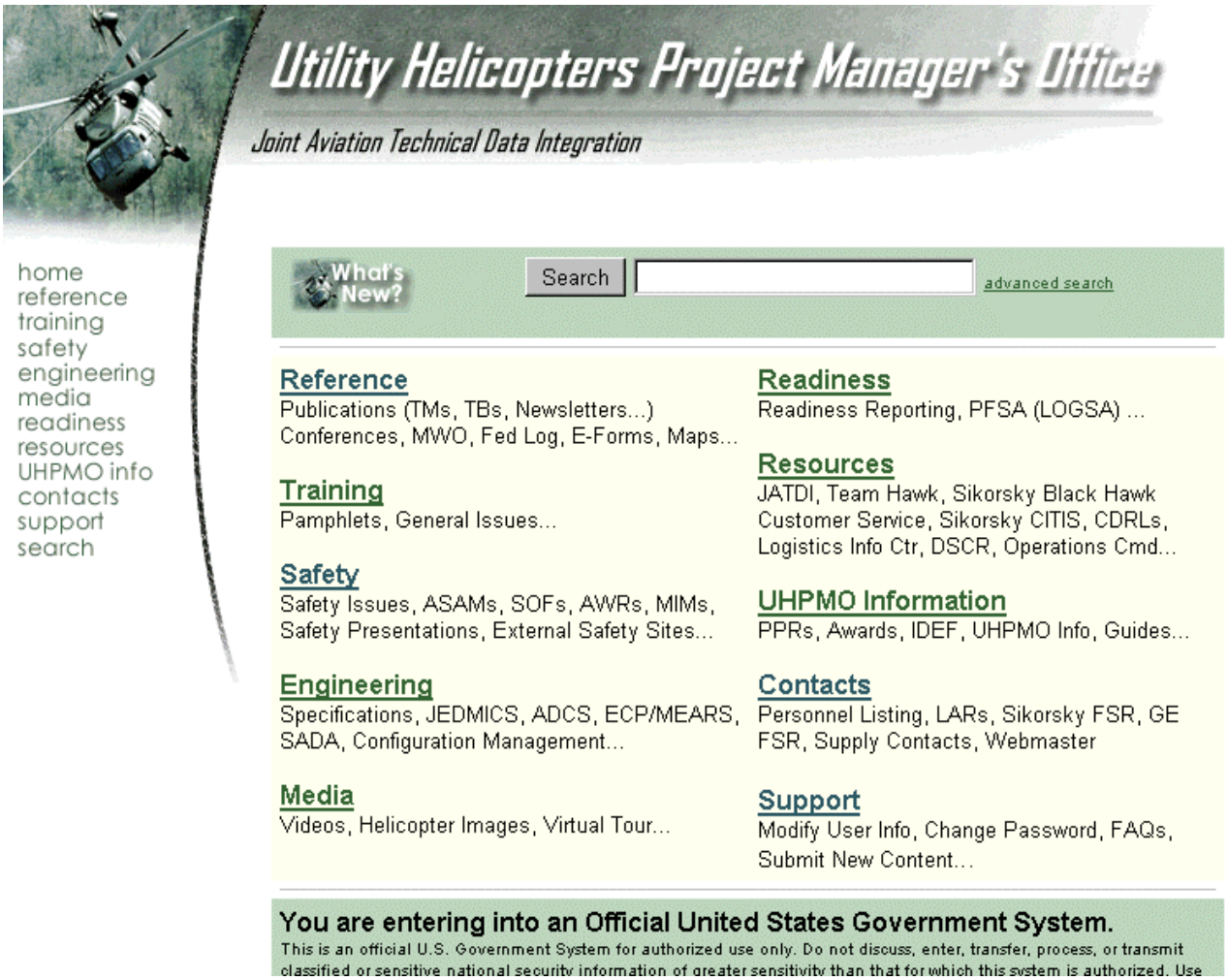


4.1.4.2 Weapon System Home Screen

Assuming the user was authorized and had the appropriate password, the following is the homepage for the Army's H-60 web-site.

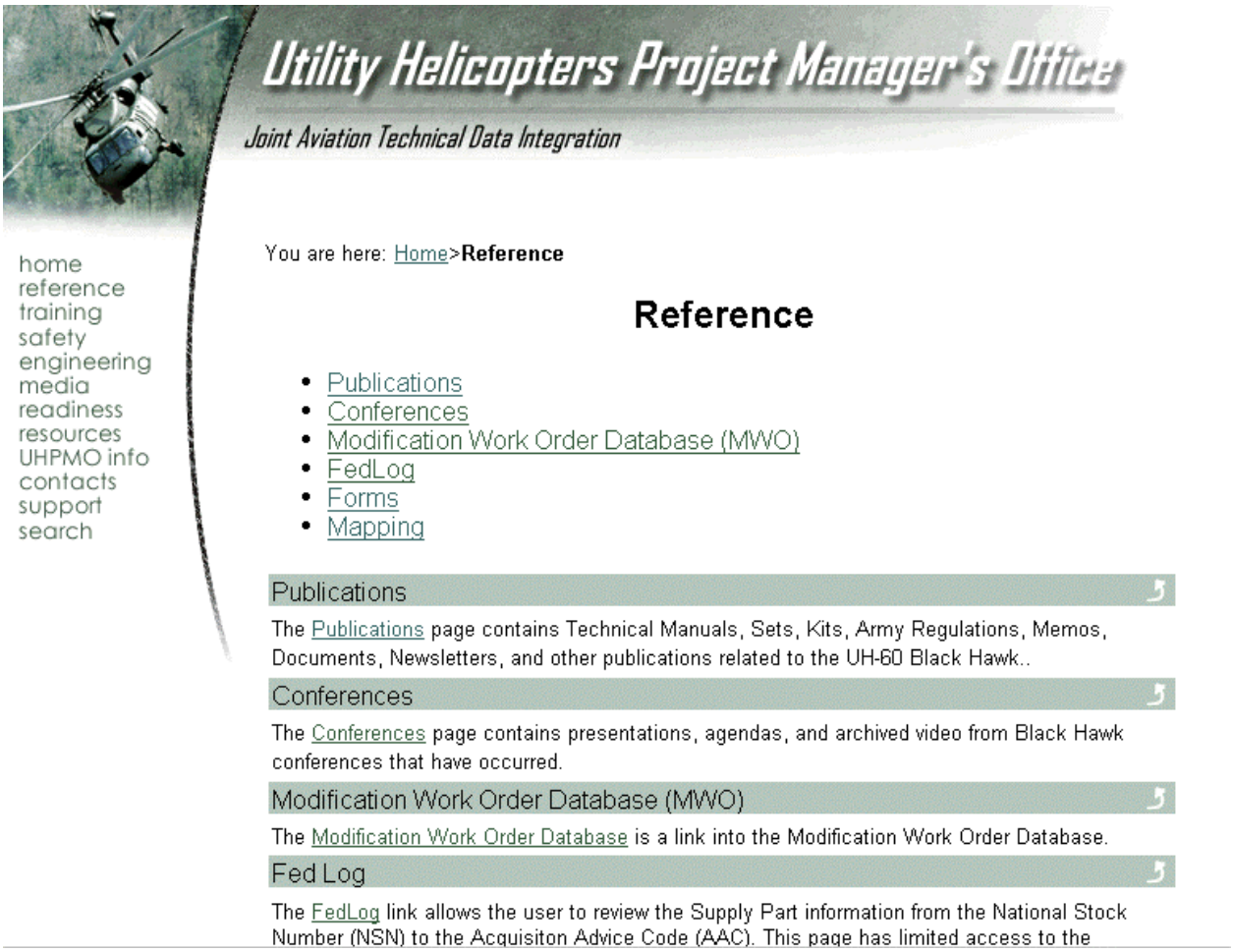
By placing the selection cursor over any of the TABs identified on the homepage will display the category page

The following sections discuss the types of information available through this web-site. While this is an example of the Army web-site the majority of the JATDI web-sites have similar digitized data available for on-line retrieval for an authorized user.



4.1.4.3 Weapon System Reference

Use the mouse to select the Reference tab. This page contains information on publications, TM's, TB's, Newsletters, Conferences, MWO's, Fed Log, E-Forms and Maps. The user can navigate through entire manuals on-line, access IETM's and technical resource documents



4.1.4.4 Weapon System Training

The Weapon System Training page provides access to on-line training related to the Utility Helicopters.

4.1.4.5 Weapon System Safety

The Safety page contains documents on safety issues, ASAM's, SOF's, AWR's, MIM's, Presentations, External Safety Website Links, and Safety Information on the UH-1 Iroquois.

4.1.4.6 Weapon System Engineering

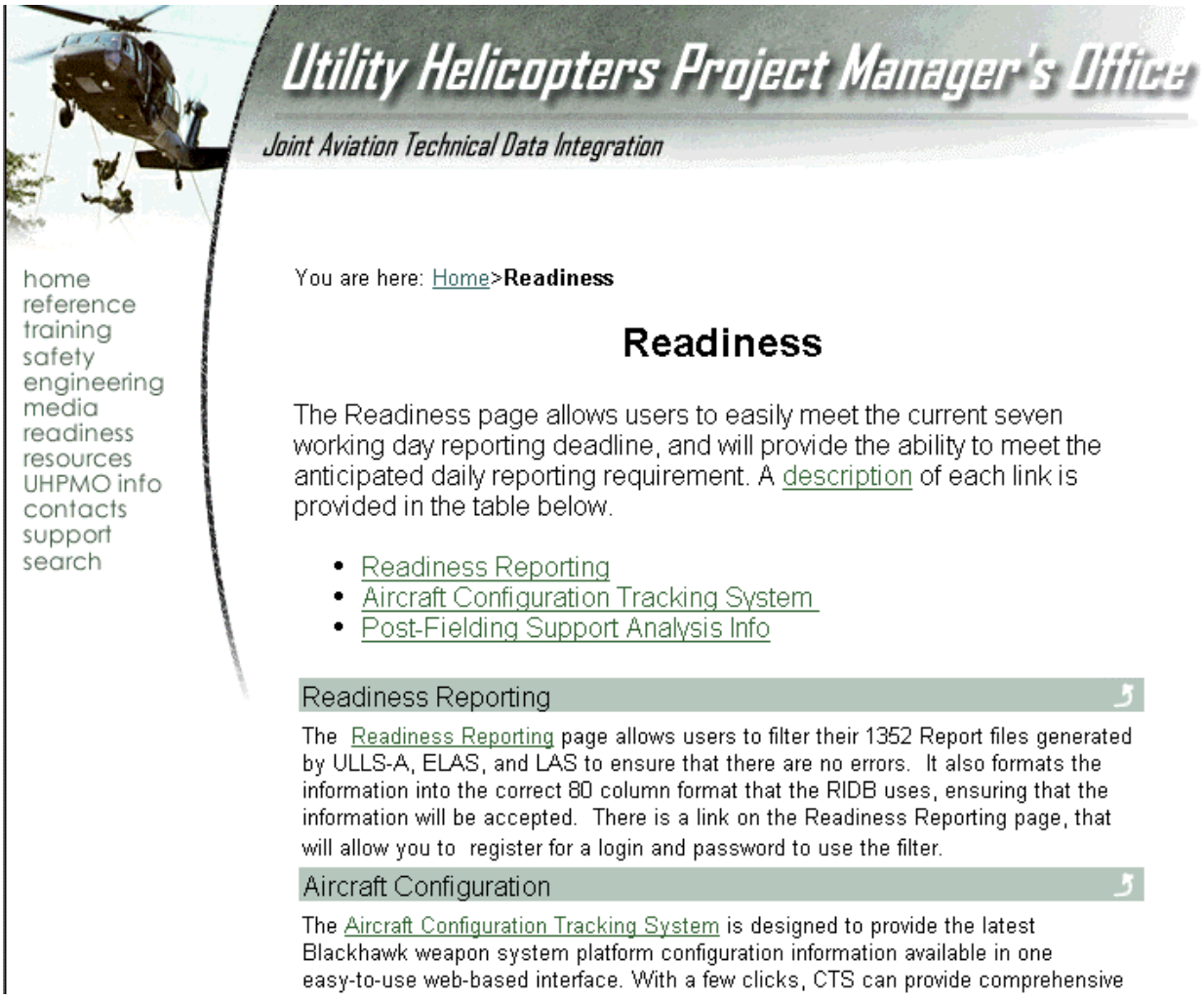
The Engineering page contains engineering information related to the Utility Helicopter. Here the used can access JEDMICS, Engineering Change Proposals/MEARS, and Configuration Management. These databases may be password controlled.

4.1.4.7 Weapon System Media

The Media page contains a large number of films from the H-60 library that can be run on-line. Through the technology utilized for this web-based application (discussed in section 6.0 JATDI Technology) extensive use has been made of multi-media capability. There are also 360 degree photos and helicopter images.

4.1.4.8 Weapon System Readiness

The Readiness page contains a direct link through which the end user can transmit their readiness information directly to the Readiness Database. There is also a link to the Post Fielding Support Analysis program that allows the end user to electronically submit problems to the PM office for assistance.



4.1.4.9 Weapon System Resources

The Resource page contains links to other Aviation related websites.

4.1.4.10 Weapon System Contacts

The Contact page contains listing for various program offices associated with the Utility Helicopter. There is a listing for the LAR's, Sikorsky Customer Service, GE Field Representatives, and the UHPMO Office.

4.1.4.11 Weapon System Support

The Support page allows the user to update their personal information, modify their password, access/submit frequently asked questions, and submit feedback to the Program Office.

4.1.4.12 Weapon System Search

Selecting the search tab results in the following screen to be displayed. As previously discussed, this search capability represents a comprehensive capability for the user.

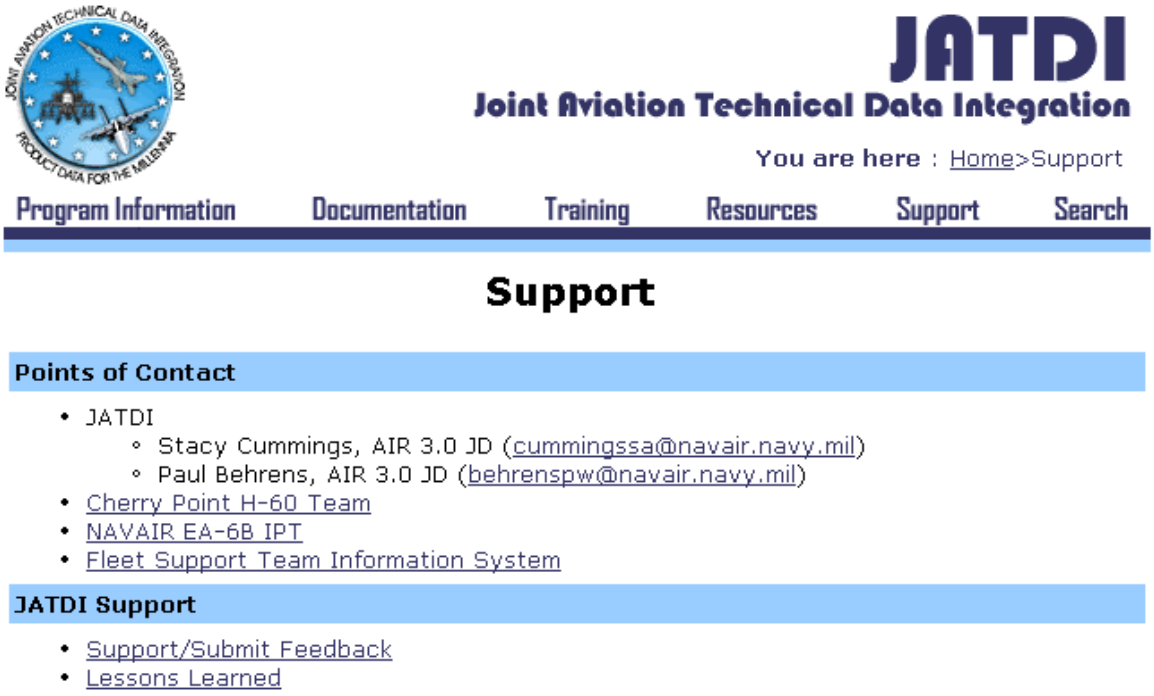
Often the user can execute a search by specific subjects and find references they did not know existed previously.

4.1.5 JATDI Support

The support page lists the contact information for the Navy Program Managers and Fleet Suport Team. This page also contains links to the Support/Submit Feedback and Lessons learned.

The Support/Submit Feedback from is used to report problems or information related to the JATDI project. This information is sent to the program managers.

The Lessons Learned page contains questions and answers that relate to JATDI. This page may be useful to answer general questions for the JATDI Project.



4.1.6 JATDI Search Capability

JATDI has a significant search capability across all of the weapon system sites it has catalogued (discussed fully under the JATDI Technology Section of this document). Selecting the Search TAB displays the following screen. By selecting the weapons platform, type(s) of digital data desired, and entering any desired keyword, the search will return with the results categorized by type of digital data. The user can further select any particular item from the search results and be directly connected to the referenced document IF the user is authorized by the security process to see the results.

This section on using the JATDI web-site has been a representative example of how the user can navigate to find detailed results. It is not possible to display every type of screen or capability contained within the application because there are literally thousands of permutations in selection capabilities and millions of pages of selected results for on-line viewing.

5.0 Use of Emerging Technology

Timely integration of new technology is critical to the continued success of the Department. The JATDI prototype deployment is intended only to be a baseline. Quickly getting each weapon system program data up to the latest internet technologies. By adopting the leading edge technologies of industry today, refresh to the new technologies will be simpler, cheaper, and thus faster. In addition, due to the inherent flexibility of these technologies, sites can migrate on their own while still adhering to the minimum standards applied by the JATDI Project Office.

DoD strategy already places great emphasis on commercial technologies and shortened acquisition cycle times through the Commercial Technology Insertion

Program (CTIP) and the Dual Use Strategy (combining military with commercial products) approved in February 1995. A major goal of these strategies is to accommodate the timely insertion of commercial technologies, that is materials and components, into Defense systems. This strategy must be fully exploited in meeting the technology insertion needs of capabilities like JATDI.

Emerging technologies must be continuously reviewed and assessed to identify those with potential benefit to JATDI. One of the key strategies of the JATDI Project Office is to quantify and measure the benefits and user satisfaction derived by utilizing JATDI over the current hard copy environment.

6.0 JATDI Technology

The overall responsibility for funding the infrastructure hardware (i.e., LANs/WANs, servers) is the responsibility of the individual Service agents. DISA remains responsible for improvements and extensions to the DoD Wide Area Network (WAN) based on both internal assessments and requirements generated by the Military Services and Defense Agencies.

Desktop Hardware is the responsibility of the services. The minimum requirement to allow all users to utilize the core capabilities of the JATDI infrastructure is any PC/Workstation capable of running Netscape Communicator Professional, v. 4.04 or higher with a minimum of a 28.8 Kbs Modem.

To view video streams, a Pentium 75 MHz with a 28.8 modem. Video quality will increase with faster computers and higher quality graphics cards.

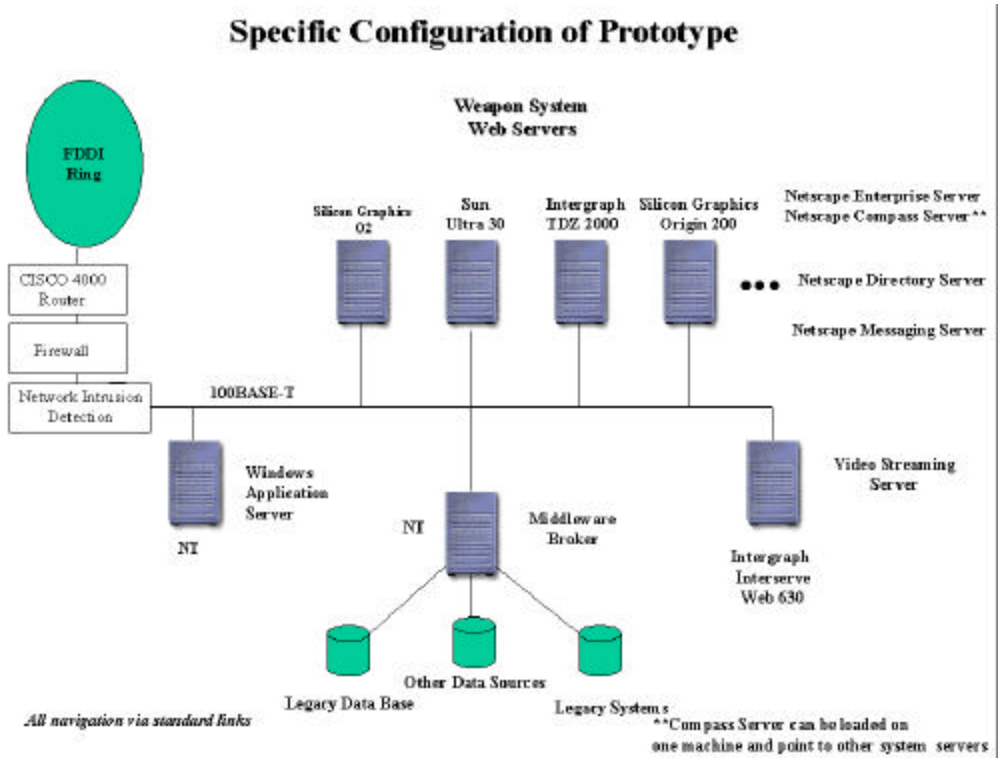
For video teleconferencing, a quality sound card, and desktop video camera is required. It is generally recommended that any new purchases of desktop machines be targeted for the latest in processor speed and the latest trends for memory etc. Demand for desktop computing resources will continue to increase.
The JATDI infrastructure is largely a network of internet-based servers and workstations. These site-based servers provide local data management and "gateway" access to internal data sources.

From an operating perspective, JATDI must guarantee uninterrupted service and remain configured and available to authorized users throughout the DoD environment at all times. This operational responsibility includes the server platform system software as well as high availability servers to mitigate risk of downtime.

JATDI will use DISA's DISN as its core interconnect facility. The DISN must evolve as the Defense Information Infrastructure's global information transport structure.

Sites will need to ensure proper bandwidth is available to accommodate the anticipated user community that their weapons systems anticipate.

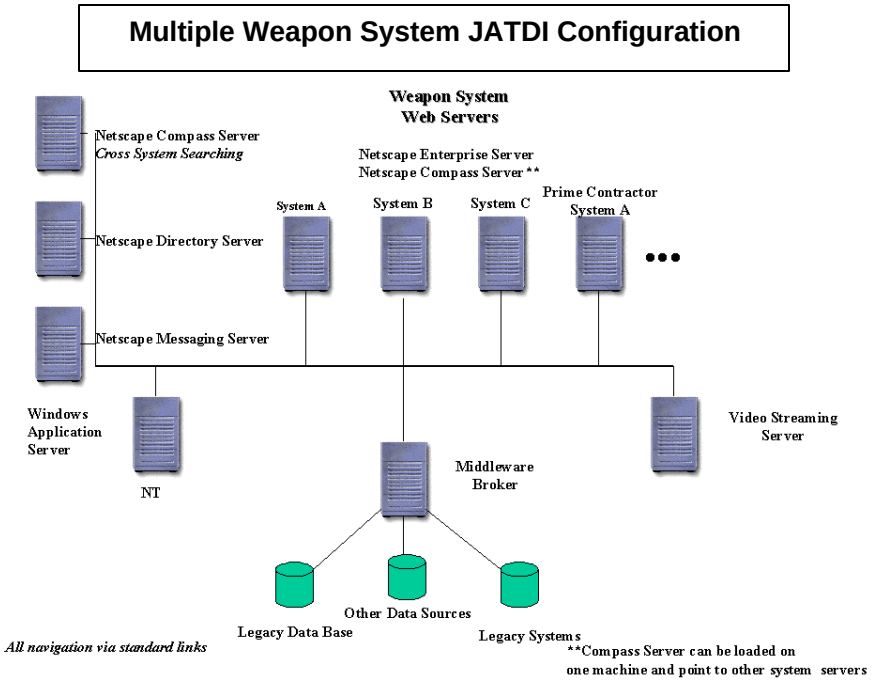
The following chart depicts the current hardware servicing the JATDI Prototype.



The core JATDI infrastructure software is comprised of Commercial Off-The-Shelf (COTS) items through the DoD Netscape Enterprise License Agreement and additional Netscape server components. This innovative licensing arrangement allows for download on demand from a DISA web site of the primary Netscape products. Regionalization or commodity based implementations of middleware brokers, windows application servers, and video-streaming servers will allow maintenance and administration costs to be minimized while providing access through single point and clicks. As such, the cost involved is primarily a web server administration, which currently exist in a majority of installations. Maintenance and sustainment costs for the core JATDI tools are already provided by DISA. Site, Weapon System, and/or service unique capabilities will be the responsibility of the owning organization.

It is anticipated that existing ADP resources will be available at most sites to establish initial capabilities. One of the strengths of the JATDI initiative is the flexibility in hardware and software acquisitions and the ability to leverage site specific existing infrastructures. There are constraints though that must be adhered to based on Operating System supportability of the Netscape components. In some cases, specific equipment to service specific functions will need to be acquired but is scaled to service the specific functions and thus minimal cost.

The basic JATDI architecture is as depicted in the following figure.



Note how the operational services can now be separated to scale to meet the data and user access volume requirements.

At each weapon systems “Home Page”, user interface capabilities will be provided to perform navigation to various system specific capabilities or information. Sites will retain total flexibility on how the pages are constructed. The ability for the standard office automation software packages, for example Microsoft Office, to generate HTML web pages, provides unprecedented ability for the end user to participate and gain ownership of the information available. This user-based participation encourages ingenuity and will be encouraged at all levels.

6.1 Netscape Enterprise Server

The Netscape Enterprise Server is part of the Netscape SuiteSpot information management solution, which enables organizations to share, manage, process, and find information through robust content management as well as through assembling and customizing information management applications. By supporting multiple platforms, databases, and document types, Enterprise Server leverages existing investments in hardware, applications, and information. Built on open Internet standards, Enterprise Server can scale information and applications from an intranet to an extranet and out to the Internet.

The Netscape Enterprise Server provides content management, application services, and centralized administration. With these capabilities at their disposal, organizations

can leverage existing resources and integrate them into the networked enterprise. Content management services help companies publish documents, search through documents and directories, update and link documents dynamically, control document access, and share information. Intelligent agents ensure that users are notified automatically when documents are modified.

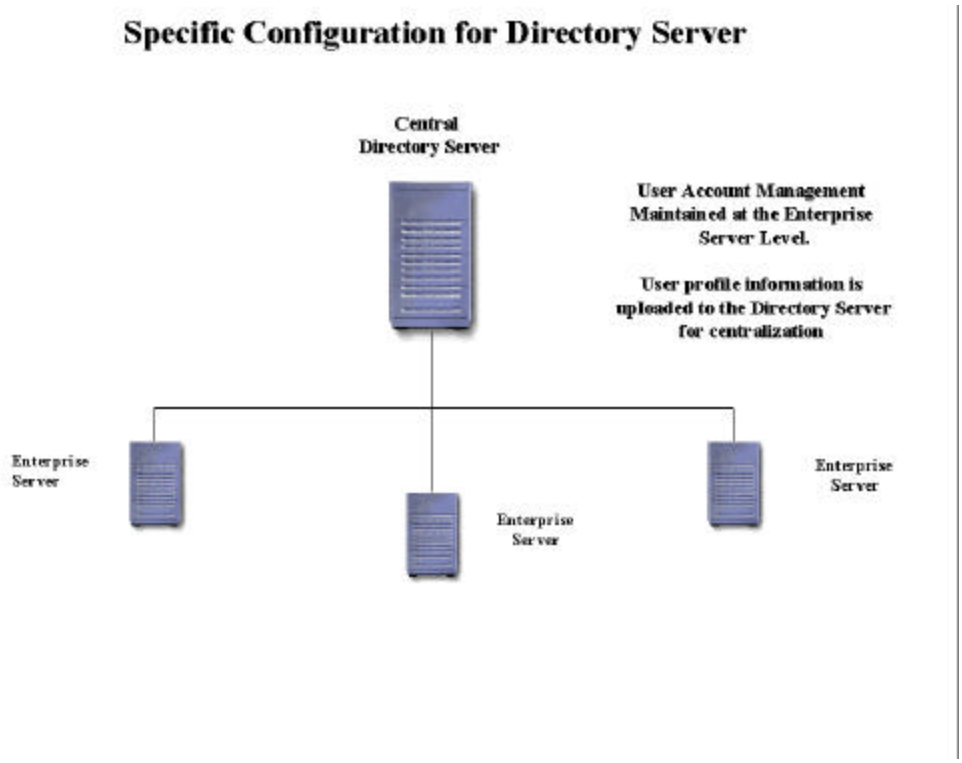
Information management applications run on Internet-standard protocols across a variety of networks, operating systems, and databases. External partners and customers can easily use such applications. The Enterprise Server provides a platform for assembling, customizing, deploying, and managing these applications.

Management tools help administrators reduce the cost of managing and maintaining a web site. Administrators can use these tools to manage users, groups, security features, and configurations; plan capacity requirements; and monitor activity in real time

The Internet and intranets have made more high-value information available than ever before. Leveraging this knowledge pool has become business-critical for many organizations seeking to gain advantage and keep busy professionals informed. To ensure that this information is easily located and readily available, network administrators need efficient, scalable ways to gather and organize this huge and ever-growing content store.

6.2 Directory Server

Initial User Profiles should be set up at the Directory Server. User rights are controlled at the Enterprise Server. This is the way you would want it; permissions for individual areas of a web server would be controlled by that weapon system, using the "Pool" of users provided by the Directory Server. It should also be noted that control of document dissemination could be controlled down to the document level utilizing the Netscape Enterprise server. Thus all types of users with different access levels can access the same web server, with only approved information getting out to approved individuals. In order to provide for the cross server capabilities, a standard set of procedures for defining a user will need to be employed to ensure “matches” at the Directory Server level.
The current user profile information captured in the prototype implementation is listed below.

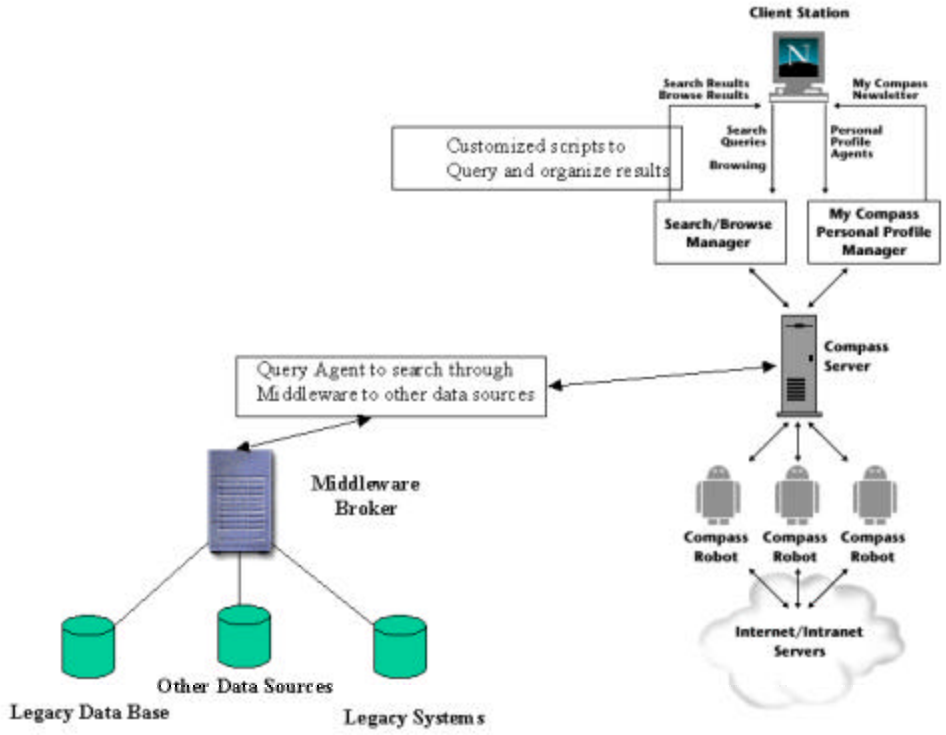


6.3 Netscape Compass Server

Netscape Compass Server provides a comprehensive set of tools that help administrators gather and organize the rich resources scattered across enterprise intranets so that users can easily find and retrieve information, whenever it is needed. Compass Server also allows users to subscribe to topics of interest and receive a newsletter summary of relevant information.

Netscape Directory Server 3.0 is the global directory service that lets companies effectively share data across intranets and extranets. Organizations can lower their cost of ownership and achieve location independence using Directory Server as a network-based registry for sharing application preferences. Advanced features such as selective replication, strong authentication, and support for international character sets help organizations build effective and protected extranets. Directory Server manages information shared across applications, such as users, groups, and preferences. A native implementation of Lightweight Directory Access Protocol (LDAP) versions 2 and 3, Directory Server lets organizations collaborate effectively within the intranet and on the extranet, from an intranet and the Internet on a daily basis.

The Compass server is used to provide cross server cataloguing and searching capability. The auto indexing features of these tools are impressive. There is a constraint however that must be adhered to at each site. The document directory tree must be standardized in order to allow the automatic cataloguing function to categorize properly. Figure A-1 identifies the configuration of the Compass Server implementation.



Compass Server Configuration

The logical document directory tree currently employed is as follows. Although, there are multiple options in optimizing the compass configurations, the configuration of the directory tree will have to be managed from a Corporate perspective.

6.4 Netscape Messaging Server

Netscape Messaging Server software extends corporate messaging beyond traditional limits with a full-featured, open solution. Built on Lightweight Directory Access Protocol (LDAP) services, Simple Mail Transfer Protocol (SMTP)-compliant delivery notifications, Internet Mail Access Protocol (IMAP4) messaging quotas, Simple Network Management Protocol (SNMP) management, and X.509 version 3 client certificates, Messaging Server provides the robustness of traditional client-server messaging systems while maintaining the lower administration costs, proven scalability, and higher performance advantages of standards-based messaging systems.

6.5 Video Streaming Software

Video Streaming software is now available to distribute video over standard networks and modems. Streaming software provides technical data cost in an easy to view and

understand methodology. The JATDI deployment of video streaming software includes indexed video that allows full text searching and starting the video at the instance of the search. In addition, videos are optimized to allow presentation over 28.8 Kb modems. This allows for dissemination to almost any remote fixed location worldwide.

The indexed video streaming capabilities require a media server to pump the video over the network. A specialty server is typically required. In the prototype implementation, RealVideo has been utilized to provide good quality video at various bit rates depending upon the network connection. The JATDI implementation has a unique capability to index and search on videotext and then start the video at the instance of the search. This feature makes the use of video streaming technology practical to the tactical user community.
Interaction between the Enterprise Server and the Video Streaming server is performed by simple search and hypertext links embedded in the HTML documents. When a desired video is found on the web page a simple button click communicates with the video server and communication is started between server and end user. Through the use of bandwidth negotiation, the proper video file is selected from the server and delivered to the client, thus a user utilizing a 28.8 modem will receive a video file that equals to a 20.0-kb stream. Video is not downloaded but instead buffered and played. This bandwidth negotiation allows videos to be served from LAN speeds (300 kb), Dual ISDN (84 kb), Dial-Up 56K (34 kb). In reference to indexed video a text stream is also played at the same time the video is being played with the client software synchronizing video, audio and text. Through the utilization of Closed Captioning and text based transcripts video can be indexed as though it was a Microsoft Word Document, allowing content-based searches. Digitization of Analog videos can be performed through COTS products available for download from the Internet. Many of these items are free. Hard Disk Requirements for Video Servers are as follows:
10 Minute High Action Video
300 kb Stream file - 23 MB to be used on a local area network
20 kb Stream file – 1.5 MB to be used on a 28.8 modem

6.6 Middleware Broker

A Middleware Broker has been used to provide the access into legacy data sources. Data sources in relational databases, other systems, on file systems, etc. also must be available to the user during search routines. This allows the user to search in single location and retrieve results from wherever the data resides.

MiddleWare Brokers are services that support a conceptually centralized but physically distributed database environment. The following are the components that must be considered in order to achieve enterprise-shared data.
To achieve full separation between data and applications, MiddleWare toolsets provide a relatively fast independent connection to multiple data sources. For example, if a site stores technical drawings in the drawing repository as well as a Product Data Management System, a single interface to the JATDI web servers will provide access to

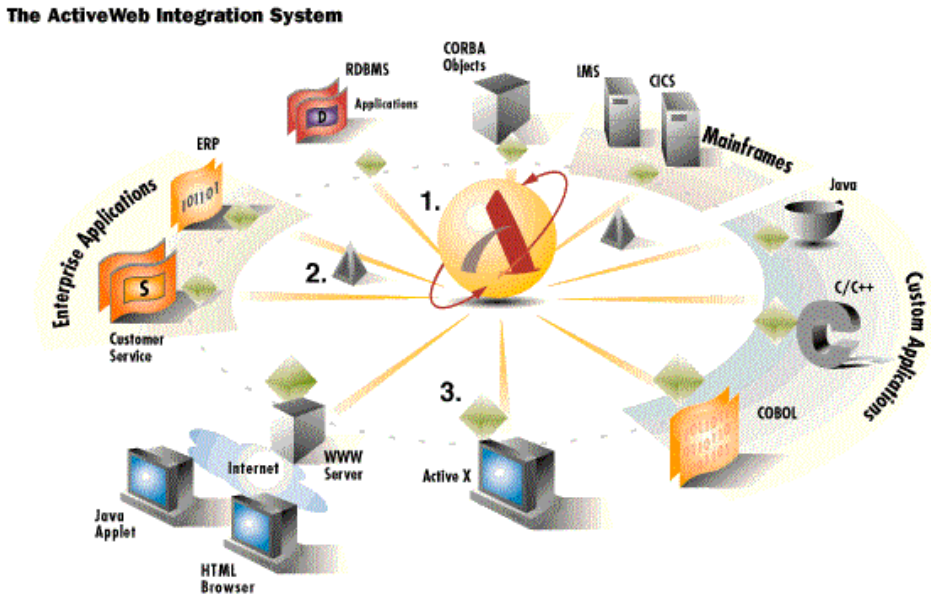
both the repository and the PDM. These connections can become quite complex and decisions will have to be made at the site level on whether it is more appropriate to cache data right at the web server or reach in on demand to the information through the middle ware. This flexibility though is necessary to allow each implementation to optimize based on their status.

The middleware broker is a key component that provides the access into the legacy data environment. In the prototype implementation, we are using a product from Active Software called ActiveWeb. It consists of the following:

1. Information Broker - The Information Broker is the central control point of the integration system.

2. Agent - Agents enable business processes to be mirrored in the system.

3. Adapters - Adapters allow diverse information resources to invisibly connect to the Information Broker



6.7 DII/COE Compliant

The JATDI infrastructure will conform to the evolving DII/COE. This will ensure JATDI maintains interoperability with other DoD environments. The infrastructure will be based on evolving standards drawn, in particular, from the Technical Architecture Framework for Information Management (TAFIM), the Joint Technical Architecture (JTA), the Defense Information Infrastructure Common Operating Environment (DII/COE), and the Defense Information Infrastructure (DII) Standard Operating Environment (SOE).

Due to the COTS nature of the JATDI initiative, sites will be responsible for the preparation and installation of the capabilities. Standard web server administration expertise is required for the initial implementations and sustainment.

DISA will remain responsible for sustainment of the DoD WAN in accordance with existing policies and arrangements. The Military Services and Defense Agencies will be responsible for ensuring the web server administration resources exist to ensure continued interoperability.

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6.8 Data Security

Data Management for corporate shared data must ensure the security of the data across organizational and machine boundaries. At a minimum, therefore, security plans and procedures must include the following: security access rules, protection against unauthorized users and backup and recovery systems. Specific security precautions must be adhered to in the site KAMNET implementation. The guidelines for establishing adequate security for protecting sensitive but unclassified information are maturing. At this time there is no specific guidance available for the configuration of the KAMNET components. However, specific guidelines have been established.

Certain fundamental services such as Directory servers which allow single user id management must be centralized. The physical location and size of the support operation must be determined. Administration of the local servers will be configured to populate the centralized Directory Server to provide the single I&A validation resource. The DISA Public Key Infrastructure initiative is also a key element in providing the "centralized" management of certificates necessary for secure operations.

6.9 Data Quality

As has been proven in the JATDI prototype implementation, availability of this information through browsers will spread very quickly throughout the Department. Maintaining integrity of the information is a key to its initial and sustained use. The user community must be assured that the latest weapon system information is available at these web sites. The specific personnel associated with managing a weapon system site must ensure that all organizations and their contractors generating information must consider the JATDI as the single most important system to ensure data is accessible from.

6.10 Data Management

DoD has a data management organization and processes that administers component data, and is comprised of both Data Administrators (DA) and Database Administrators (DBA). As data is separated from applications and managed as a separate business asset, and as a separate middleware layer is added to allow global data access, the

existing data management organization and process will increase in the amount of work required and the complexity of that work.

The definition of standard categories to ensure operations of the auto catalogue functions and the level of data standardization is a task that must be managed at a corporate level. There are many options. As a general guide though, we need to posture for each Weapon System contractor to approach a little differently. This is OK and necessary to allow optimization of the data management program.

The weapon system program managers must ensure all data deliverables are in a digital form in a format that is able to catalogue with the Enterprise Server. Recognizing that the Services have unique missions, problems and charters, locally shared data will reflect that unique quality. Therefore, in keeping with the focus of centralized direction and decentralized execution, each Service will maintain their own centralized repositories for locally shared information. Many of the same issues need to be defined for locally shared data.

6.11 Business Applications

The JATDI configuration emphasis is based on the concept of separation of applications from the supporting system infrastructure and corporate data. Changes to the business application programs do not pose a threat to the virtual enterprise unless changes to interfaces are involved. Accordingly, changes that do not impact application interfaces will remain the configuration management responsibility of the developing agency. Application changes that involve changes to the interface will be subject to approval of a corporate Configuration Control Board (CCB). Sites will maintain the ability to establish their own interfaces on demand as long as the corporate interfaces are also supported. Sites interfaces to the JATDI will be required to post capabilities to the JATDI Application web page for visibility and dissemination to other sites to use if necessary.

7.0 General Operating Requirements

Hardware/software maintenance for JATDI will be accomplished using a tiered approach. The central tier for hardware/software maintenance support will be at the JATDI Management Office working with DISA through the Enterprise License Agreement program. Sites will acquire and implement the core JATDI capabilities with some anticipated assistance from the JATDI Project Team.

Operating locations & the maintenance costs associated with the hardware/software will be the responsibility of the Components/Agencies. The inherent flexibilities of the JATDI environment allow for sites to optimize their program and realize economies of scale where possible.

Warranties, licenses, maintenance/service agreements, and technical support will be funded by the Components for the life cycle of the hardware/software resource. Active

warranties, licenses, and agreements of those hardware/software resources directed by the JATDI Project Team will remain in force throughout their funded period; extensions past the funded period and/or changes will be the responsibility of the Components/Agencies.

Installation will be the responsibility of the Components/Agencies. They will be responsible for ensuring that it is successfully installed, users are trained, and that the local infrastructure performs in a synchronous fashion within the JATDI.

7.1 Central JATDI Operational Support

The JATDI Project Team will provide a second tier help desk to assist in issues and problem not able to be resolved locally.

The JATDI support strategy will promote an environment where direct user communications are greatly facilitated using e-mail, integrated trouble reporting and Intranet Web technology including video teleconferencing.

Development Facility/Test Bed-Provide a standard environment for software development, test and evaluation, integration, and follow-on maintenance (sustainment). The Development Facility will simulate proposed modifications to the Enterprise infrastructure (hardware, software, and communications network). Since this environment will present the developer with known, quantifiable environmental characteristics, the transition from developing and evolving hardware and software to the operational enterprise, and will ensure a high success rate.

Configuration Management - Provide for release of infrastructure software from a central location to the production sites. The KAMNET management office will maintain a Configuration Management Database and perform all centralized configuration management functions required to support the establishment and maintenance of corporate data and its use in integrated systems development.

Software Repository - Operation of a web site based software repository to support the release of certified infrastructure software products from a central location to all connected sites. This site will also have publishing capabilities opened to the sites to post their innovations to share with the community.

- Effectively limit access to avoid contamination or destruction through inadvertent mistakes.
- Quality Digital Data - Data quality is primarily achieved in the engineering or reengineering of data instead of through detection and correction. It is time to move smartly to ensure all data is available electronically. In initial JATDI implementations, personnel are focusing on the data deliverables from the contractors to ensure that any legacy data conversion or other functions

necessary to make information available is addressed at the source to allow direct posting to the web servers

Each of these characteristics builds upon and relies on the others. Data standardization simplifies data sharing, and improves data quality by resolving conflicting data names and meanings. Data sharing improves data quality by reducing redundancy and limiting the potential for human error. Data security improves data quality by ensuring its integrity, and encourages data sharing by reassuring providers and subscribers.

JATDI data will be acquired once and reused as needed. Essentially, this means there is a single point of entry for all data into JATDI. Organizations must be defined as the data providers or authoritative sources, the data subscribers must be identified, and business agreements between these organizations must be developed. It is most desirable to establish a web access to the contractor facility and never take possession of the information in the Government. The JATDI infrastructure allows the contractor to perform data management their way and just adheres to the basic configuration requirements as defined through JATDI.

Cost effective flexibility with the equivalent of plug and play capability allows local ingenuity to quickly become enterprise resources. The JATDI implementation is a weapon system/product data oriented approach to making technical information available on demand.

8.0 Summary

JATDI is an integrated combination of data, infrastructure, and applications that will work with other data; applications and infrastructure that inherently interoperate and are relatively cost effective and easy to deploy.

One of the primary goals of the JATDI infrastructure is to provide a fully text searchable, comprehensive multi-media technical information library. The users have single point entry to key technical information and can retrieve through simple or complex text searches. This environment is characterized by cooperation across functional areas. Corporate data will be shared and available on demand anywhere in the world in both the strategic and tactical environment.

The elements of JATDI are independent of one another but interact based on the transaction standards that are defined and each installation/implementation must adhere to. As long as minimal standards are adhered to, if changes are made to the data in this environment, it will not affect the infrastructure or the applications that use it. In the same manner, if the infrastructure is changed it will neither affect either the applications that reside within the infrastructure nor the data used by those applications or stored in the infrastructure. This epitomizes the awesome power of the internet technologies.

The technology exists to change the way DoD performs - it is up to the community to benefit from the technology improvements. Institutionalizing the target information environment will be a joint initiative and will require a careful balance to ensure uninterrupted DoD operations.